1 INTRODUCTION

This draft report presents Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff recommendations for establishing a Total Maximum Daily Load for methylmercury in the Sacramento-San Joaquin Delta Estuary (Figure 1.1). The report contains an analysis of the mercury impairment, a discussion of the primary sources, a linkage between sources and impairments, and recommended methyl and total mercury reductions to eliminate the impairment. The report is one component in the Central Valley Water Board's water quality attainment strategy to resolve the mercury impairment in the Delta.

The Federal Clean Water Act (CWA) requires States to identify water bodies that do not meet their designated beneficial uses and to develop programs to eliminate impairments. States refer to the control program as a Total Maximum Daily Load (TMDL) program. A TMDL is the total maximum daily load of a pollutant that a water body can assimilate and still attain beneficial uses. The Central Valley Regional Water Quality Control Board determined in 1990 that the Delta was impaired because fish had elevated levels of mercury that posed a risk for human and wildlife consumers. In addition, the San Francisco Bay Regional Water Quality Control Board (San Francisco Water Board) identified Central Valley outflows via the Delta as one of the principal sources of total mercury to San Francisco Bay and assigned the Central Valley a load reduction (Johnson & Looker, 2004). Therefore, the final mercury TMDL control plan for the Delta must ensure protection of human and wildlife health in the Delta and meet the San Francisco Bay load allocation to the Central Valley.

In order to meet State and Federal requirements, the TMDL development process must include compiling and considering available information and appropriate analyses relevant to defining the impairment, identifying sources, and assigning responsibility for actions to resolve the impairment. This report has the following sections that reflect the key elements of the Delta methylmercury TMDL development process:

- Chapter 2 – Problem Statement: Presents information that explains the overall regulatory framework for this TMDL, lists future milestones and describes the extent of mercury impairment in the Delta.
- Chapter 3 – Controllable Processes: Describes the methylation processes that are potentially controllable in the Delta. The concepts summarized in this chapter guided the development of the methylmercury TMDL for the Delta, particularly the linkage analyses (Chapter 5), methyl and total mercury source analyses (Chapters 6 & 7), and methylmercury allocation and implementation strategies described in Chapter 4 of the Proposed Basin Plan Amendment draft staff report.
- Chapter 4 – Numeric Targets: Proposes numeric targets for fish, which, if met, would protect beneficial uses of Delta waters.
- Chapter 5 – Linkage Analysis: Describes the mathematical relationship between aqueous methylmercury concentrations and the proposed numeric targets for fish mercury levels, which is used to determine an aqueous methylmercury goal that guides the allocation of methylmercury source reductions within the statutory Delta boundary and its tributary watersheds.
- Chapters 6 & 7 – Source Assessment: Identifies and quantifies concentrations and loads of methyl and total mercury sources.
- Chapter 8 – Allocations: Presents recommended methylmercury allocations and total mercury limits for Delta sources to reduce methylmercury concentrations in fish and to comply with the

USEPA's CTR and the San Francisco Bay Mercury TMDL allocation for total mercury leaving the Central Valley watershed. This chapter also describes the margin of safety afforded by the analyses' uncertainties and consideration of seasonal variations.

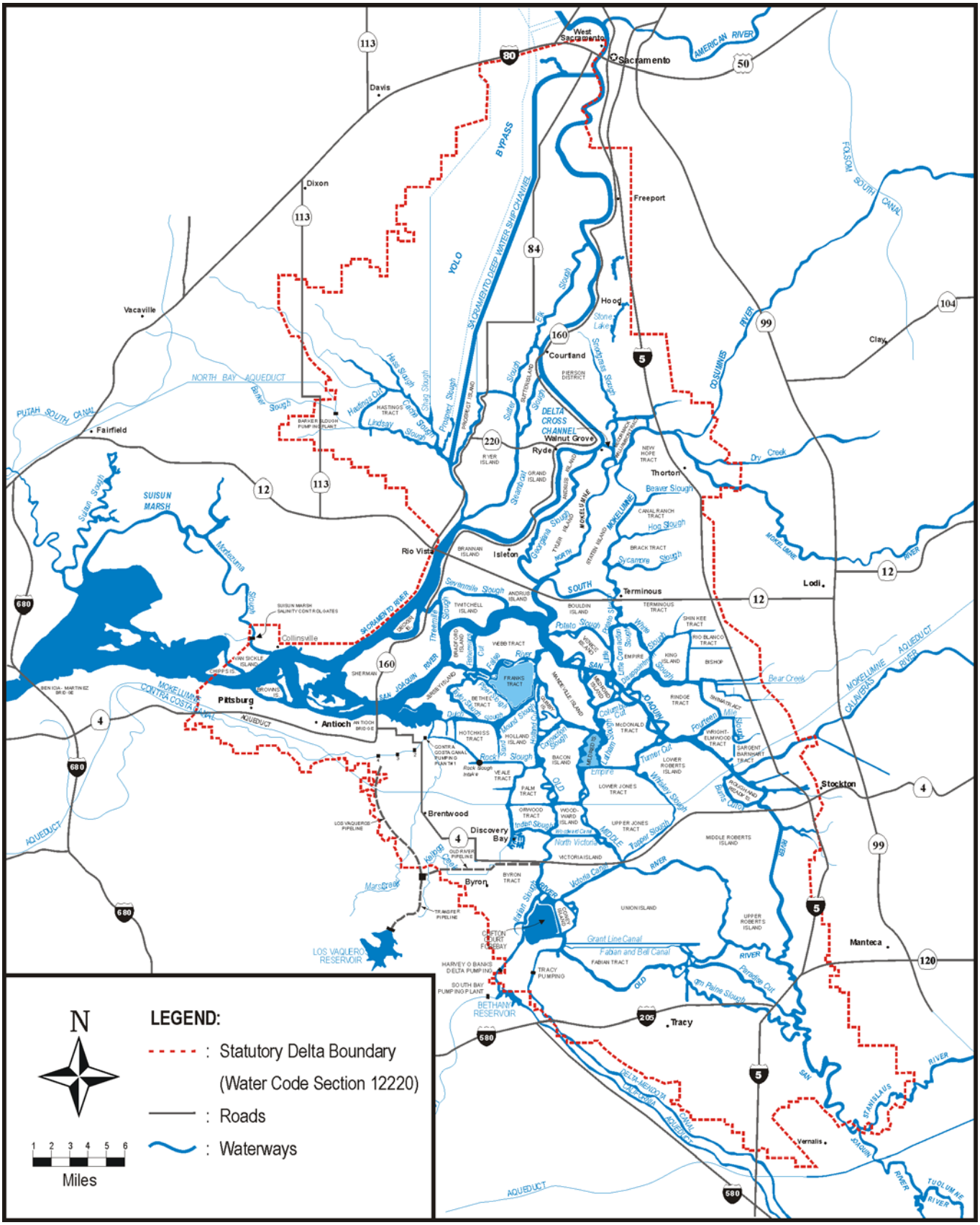

Figure 1.1: The Sacramento-San Joaquin Delta [DWR, 1995]. The dotted red line outlines the statutory boundary of the Delta. This TMDL applies to all areas in the legal Delta.